

Claims

1. A form-fill-seal machine comprising means for moving a web of packaging material through the machine according to a process path and means for transforming the web into filled bags, furthermore comprising a zipper strip applicator device for applying, in particular by pre-sealing, of a zipper strip onto the web, said zipper strip applicator device having means for supplying a zipper strip for each bag transverse to the process path, which supply means comprise at least one conveyor, which is provided with means for retaining or engaging the zipper strip during supply, wherein the conveyor is provided with driving means, the machine further comprising control means having edge noticing means for noticing the position of a longitudinal edge of the web with respect to a fixed reference in the machine, and means for controlling the driving means for the zipper strip conveyor transverse to the web in response to the data from the noticing means.
2. The form-fill-seal machine according to claim 1, wherein the zipper strip conveyor comprise a first and a second conveyor, which in supply direction of the zipper strip are placed one behind the other and are both provided with means for retaining the zipper strip during supply, a blade being placed between the first and second conveyor for cutting the zipper strip.
3. The form-fill-seal machine according to claim 2, provided with control means for the first and second drive means and the blade, the control means being adjusted to consecutively operate the first drive means to transfer a predetermined length of zipper strip to the second conveyor, to subsequently operate the blade and then operate the second conveyor for positioning the cut-off zipper strip portion transverse to the web.
4. The form-fill-seal machine according to claim 3, the control means being adjusted to let both conveyors move at the same speed during the supply of the length of zipper strip.

5. The form-fill-seal machine according to claim 4, the retaining means of the first and the second conveyors being controlled by the control means.

5 6. The form-fill-seal machine according to claim 5, the control means being adjusted for continuously activating the engaging means of the first and second conveyors.

10 7. The form-fill-seal machine according to claim 5, the engaging means being vacuum means.

8. The form-fill-seal machine according to claim 7, provided with means for adjusting the active length of the vacuum means for the second conveyor.

15 9. The form-fill-seal machine according to claim 8, the control means being provided with means for comparing an entered zipper strip length and the position in transverse direction to the web and the adjusted length of the vacuum means, and of means for releasing the drive of the machine based on the outcome of said comparison.

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10. The form-fill-seal machine according to claim 9, the means for adjusting the active length of the vacuum means for the second conveyor comprising a tube to be connected to a vacuum source, which tube in its circumference is provided with series of apertures of different length extending in tube direction,
25 and which is rotatable in an adjustable manner to let a selected series of apertures form the connection between the apertures in the vacuum band and the tube.

30 11. The form-fill-seal machine according to claim 1, at least the second conveyor being placed below the web.

12. A form-fill-seal machine comprising means for moving a web of packaging material through the machine according to a process path and means for

transforming the web into filled bags, furthermore comprising a zipper strip applicator device for applying, in particular by pre-sealen, of a zipper strip onto the web, said zipper strip applicator device having means for supplying a zipper strip for each bag transverse to the process path, which supply means comprise
5 at least one conveyor, which is provided with means for retaining or engaging the zipper strip during supply, wherein the conveyor is provided with driving means, the machine further comprising means for positioning the zipper strip applicator device in a direction transverse to the web and control means having edge noticing means for noticing the position of a longitudinal edge of the web
10 with respect to a fixed reference in the machine, and means for controlling the means for positioning the zipper strip applicator device in transverse direction, in response to the data from the edge noticing means.

13. The form-fill-seal machine according to claim 12, the machine having a
15 frame and the zipper strip applicator device comprising a frame part which is supported on the frame of the machine, the means for positioning comprising a drive which is connected to and placed between the machine frame and the frame part.

20 14. The form-fill-seal machine according to claim 13, wherein the drive comprises a spindle motor.

15. The form-fill-seal machine according to claim 12, the machine having a frame and an auxiliary frame on which the zipper strip applicator is supported
25 and which is movable with respect to the machine frame between a retracted operative position and an extended adjustment position, an additional frame part being supported on the auxiliary frame, the means for positioning comprising a drive which is connected to and placed between the auxiliary frame and the frame part.

30 16. The form-fill-seal machine according to claim 15, wherein the drive comprises a spindle motor.

17. A form-fill-seal machine comprising means for moving a web of packaging material through the machine according to a process path and means for transforming the web into filled bags, furthermore comprising a zipper strip applicator device for applying, in particular by pre-sealing, of a zipper strip onto the web, said zipper strip applicator device having means for supplying a zipper strip for each bag transverse to the process path, which supply means comprise at least one conveyor, which is provided with means for retaining or engaging the zipper strip during supply, wherein the conveyor is provided with driving means, the machine further comprising control means having edge noticing means for noticing the position of a longitudinal edge of the web with respect to a fixed reference in the machine.

18. The form-fill-seal machine according to claim 17, the control means comprising moving means for moving the zipper strip conveyor in a direction transverse to the web in response to the data from edge noticing means.

19. The form-fill-seal machine according to claim 18, the moving means being adapted to be controlled by the control means to operate the drive of the zipper strip conveyor in the movement of the zipper strip to be applied.

20. The form-fill-seal machine according to claim 19, wherein the zipper strip conveyor comprise a first and a second conveyor, which in supply direction of the zipper strip are placed one behind the other and are both provided with means for retaining the zipper strip during supply, a blade being placed between the first and second conveyor for cutting the zipper strip, wherein the control means are adapted to control the drive of the second conveyor in the movement of the zipper strip to be applied, in response to the data from the edge noticing means.

21. The form-fill-seal machine according to claim 18, the moving means being adapted to be controlled by the control means to position the zipper strip applicator in a direction transverse to the web in response to the data from the edge noticing means.

22. The Form-fill-seal machine according to claim 17, the zipper strip applicator device being supported on an auxiliary frame, which itself is supported in a main frame of the machine, the auxiliary frame with respect to the main frame being moveable between a retracted operative position and an extended adjustment position.

23. The form-fill-seal machine according to claim 22, furthermore provided with a calibration on the second conveyor, extending along the retaining means.

24. The form-fill-seal machine according to claim 22, further provided with control means that have been provided with means for noticing the operative position of the auxiliary frame and with means for releasing the drive of the machine based on that observation.

25. The form-fill-seal machine according to claim 17, further provided with control means having means for noticing the position of a longitudinal edge of the web with respect to a fixed reference in the machine and with means for the positioning in transverse direction of the zipper strip applicator device, in response to the data from the edge noticing means.

26. The form-fill-seal machine according to claim 17, further provided with control means having means for entering data in it regarding the length of the bag and possibly the type of bag, and with means for positioning the zipper strip applicator device in transverse direction, controlled by the control means in response to the data regarding the bag width and possibly the type of bag, in order to during an adjustment stage of the machine correctly position the zipper strip applicator device in the machine, considered in transverse direction.